

Abstract of the Disclosure

5 A method for in-situ descum/hot bake/dry etch a polyimide  
photoresist layer and a passivation layer in a single process  
chamber is disclosed. A process chamber that can be used for  
conducting in-situ a descum, a hot bake and a dry etch process  
sequentially in the same chamber is also disclosed. In the method,  
a process chamber equipped with a wafer platform and a wafer  
backside heating and cooling device is first provided, followed by  
the step of positioning a wafer that has a passivation layer and a  
patterned polyimide photoresist layer on top of the platform. An  
oxygen plasma is then generated in the chamber cavity to conduct a  
descum process, followed by flowing a heated inert gas onto a  
backside of the wafer to conduct a hot bake process. A cooling  
inert gas is then flown onto the wafer backside and an etchant gas  
15 is flown into the chamber to conduct a dry etch process for forming  
a via opening in the wafer.